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EPA **Site Analysis**
Albion-Sheridan Township Landfill
Albion, Michigan

EPA Region 5
and OERR



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Site Analysis
Albion-Sheridan Township Landfill
Albion, Michigan

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NOTICE

This document has undergone a technical and quality control/assurance review and approval by personnel of the EPA/ORD Environmental Monitoring Systems Laboratory at Las Vegas (EMSL-LV), and is for internal Agency use and distribution only.

ABSTRACT

This report presents an analysis of aerial photography of the Albion-Sheridan Township Landfill site, located 1.6 kilometers (1 mile) east of Albion, Michigan. The purpose of this analysis was to locate and identify potential sources of contamination.

Findings include excavation and filling activity, possible drums, a horizontal tank, refuse, ground scarring and various types of unidentifiable material.

The Environmental Protection Agency's (EPA) Environmental Photographic Interpretation Center in Warrenton, Virginia, a branch of the Advanced Monitoring Systems Division of the Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, performed this analysis at the request of the Superfund Branch of EPA Region 5 in Chicago, Illinois, and the Office of Emergency and Remedial Response in Washington, D.C. This analysis covers the period between 1961 and 1990, and the report was completed in January 1991.

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INTRODUCTION

This report presents an analysis of aerial photography of the Albion-Sheridan Township Landfill site, located just north of the North Branch of the Kalamazoo River and 1.6 kilometers (1 mile) east of the town of Albion, Michigan. According to collateral information the landfill was active from 1966 until 1981, when it was closed. Reportedly the Albion-Sheridan Township Landfill accepted municipal and industrial refuse including metallic sludges and paint residues. The purpose of this analysis is to locate and identify potential sources of contamination.

Findings include excavation and filling activity, possible drums, a horizontal tank, refuse, ground scarring and various types of unidentifiable material.

Figure 1 shows the site location, keyed to a photocopy of a mosaic of two U.S. Geological Survey (USGS) 1:24,000-scale topographic quadrangle maps. Site boundaries or areas used in this analysis were determined from observations made from the aerial photography in conjunction with collateral data supplied by the Environmental Protection Agency (EPA) Region 5 and do not necessarily denote legal property lines or ownership.

Aerial photography of the site was obtained to represent the period from 1961 to 1990.¹ Black and white photography from 1961, 1967, 1974, 1976 and 1981; color photography from 1990; and color infrared photography from 1981 and 1986 were used for this analysis. Black and white photography from 1974 and color infrared photography from 1981 and 1986 were not reproduced for this report due to poor film quality.

The EPA's Environmental Photographic Interpretation Center in Warrenton, Virginia, a branch of the Advanced Monitoring Systems Division of the Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, performed this analysis at the request of the Superfund Branch of EPA Region 5 in Chicago, Illinois, and the Office of Emergency and Remedial Response in Washington, D.C. This analysis covers the period from 1961 to 1990, and the report was completed in January 1991.

¹A complete listing of maps and photography used in this report is provided in the References section.

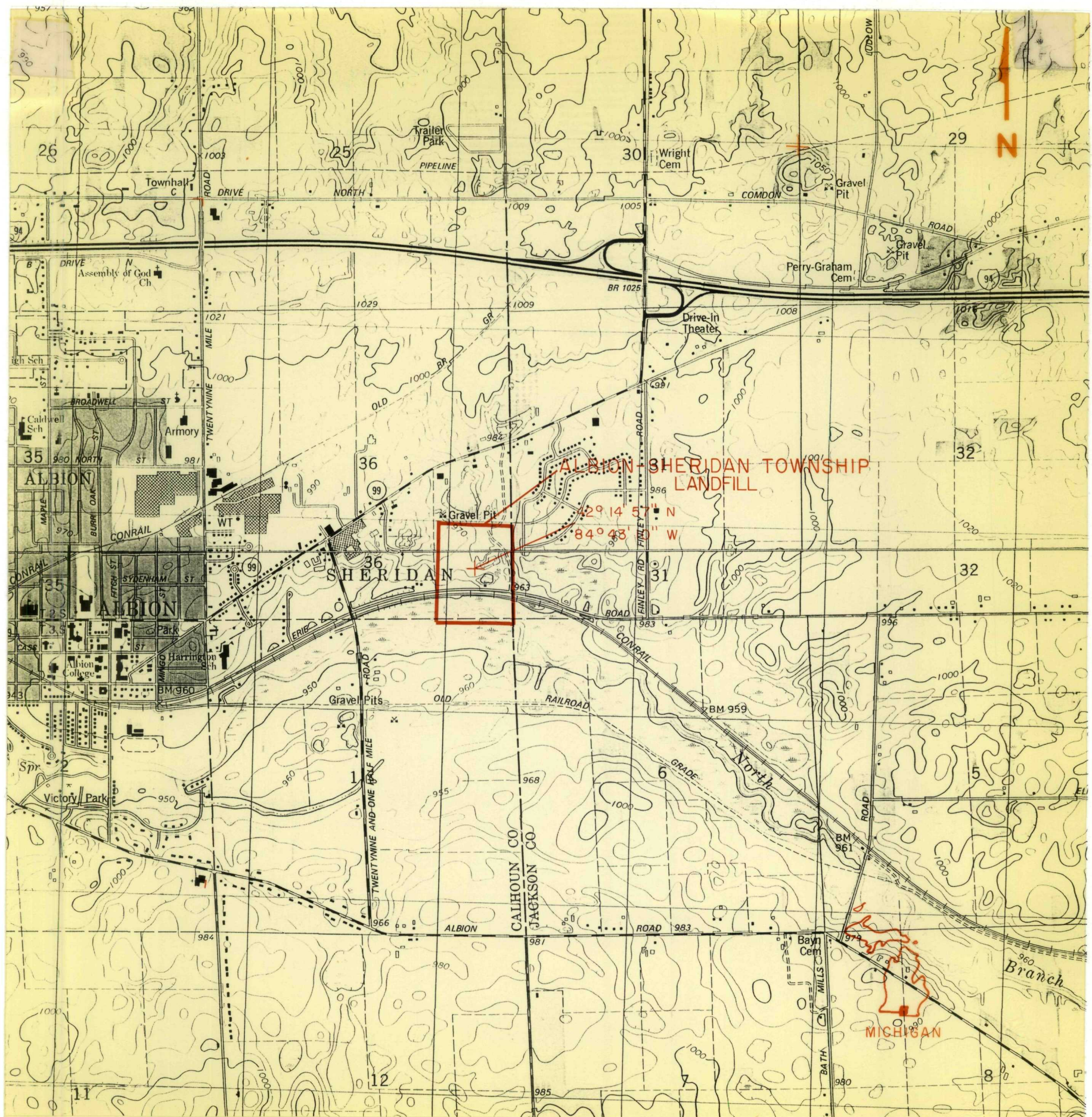


FIGURE I
ALBION-SHERIDAN LF

NORTHEAST, SOUTHEAST
ALBION, MI QUADS

APPROX. SCALE 1:24,000

METHODOLOGY

A search of government and commercial sources was undertaken to obtain the best available aerial photography of the site spanning the desired time frame. The photography and other sources of information used in this report are listed in the References section.

The analysis was performed by viewing backlit transparencies of aerial photography through stereoscopes. Stereoscopic viewing creates a perceived three-dimensional effect which, when combined with viewing at various magnifications, enables the analyst to identify signatures associated with different features and environmental conditions. The term "signature" refers to a combination of visible characteristics (such as color, tone, shadow, texture, size, shape, pattern, and association) which permit a specific object or condition to be recognized on aerial photography.

Photographic prints were made from those years of aerial photographic coverage that reveal significant information about the site. The analyst's findings are annotated on overlays to prints and/or base maps and described in the accompanying text. Site boundaries or areas used in this analysis were determined from the aerial photography in conjunction with collateral data provided by EPA Region 5 and do not necessarily denote legal property lines or ownership.

Due to factors inherent in the photographic printing process, prints do not exhibit the level of detail that is visible in the original aerial photography. Therefore, some features identified from the aerial photography may not be clearly discernible, or even visible, on the photographic prints presented in this report.

The terms "possible" and "probable" are used to indicate the degree of certainty of signature identification. "Possible" is used when only a few characteristics are discernible or these characteristics are not unique to a signature. "Probable" is used when incrementally more characteristics are discernible. No qualifying terms are used when the characteristics of a signature allow for a definite feature identification.

AERIAL PHOTO SITE ANALYSIS

OCTOBER 18, 1961 (FIGURE 2)

Figure 2 represents the site prior to landfilling activity. The eastern half of the site includes several excavation areas (EX1-EX4). EX3 contains liquid (not annotated). Access roads are also visible onsite. The western portion of the site is undisturbed. The southern portion of the site includes a section of Erie Road, a rail line (not annotated), and the North Branch of the Kalamazoo River.

LEGEND

- CA - Cleared Area
- CO - Cylindrical Object
- D - Drums
- DG - Disturbed Ground
- DK - Dark-Toned
- EX - Excavation
- FA - Fill Area
- GR - Graded Area
- GS - Ground Scar
- HT - Horizontal Tank
- LT - Light-Toned
- M - Material
- MM - Mounded Material
- MR - Mounded Refuse
- R - Refuse
- REV - Revegetated
- SL - Standing Liquid
- ST - Staining
- TR - Trench
- WM - Waste Material
- |||| - Edge of Slope
- - Site Boundary

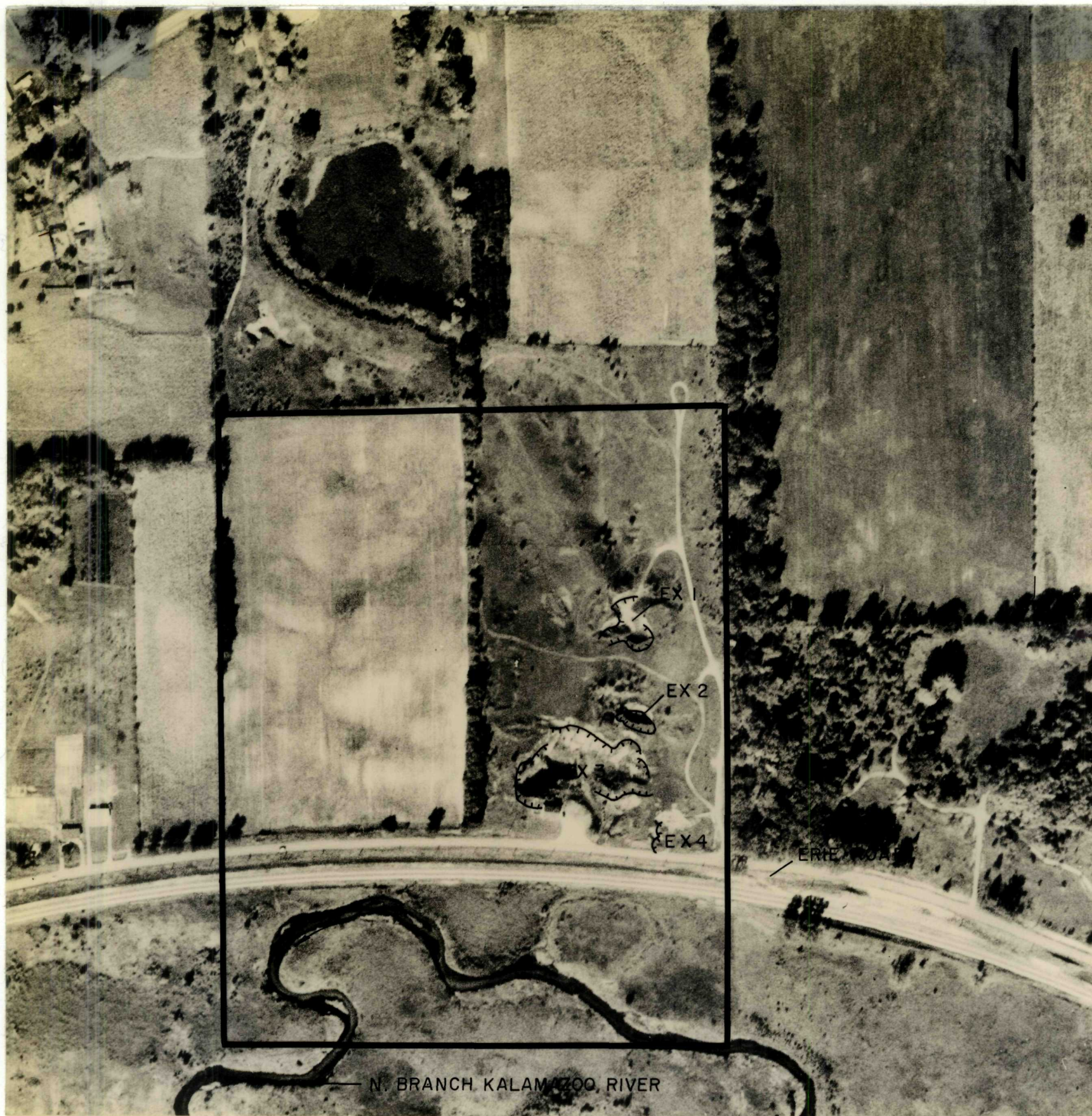


FIGURE 2
ALBION-SHERIDAN LF

OCTOBER 18, 1961

APPROX. SCALE 1:3,700

SEPTEMBER 12, 1967 (FIGURE 3)

Excavation activity has increased considerably in the northeastern portion of the site. EX1 has expanded. EX2 has revegetated and no significant change in size or shape is visible. EX3 continues to contain liquid and to occupy much the same area. Disturbed ground (DG) is visible west of EX3. EX4 has also increased in size, and now includes the area east of EX3 to the eastern site boundary. Another excavation, EX5, is now present south of EX1. EX6 is located on the northern site boundary, and possible waste material (WM) is visible to the south.

Three areas of fill (FA) are in the western portion of the site where fields were visible in 1961. The area has also been excavated and graded (GR).

Variably toned mounded material (MM), possibly waste material, is present north of the site boundary.

LEGEND

CA	- Cleared Area
CO	- Cylindrical Objects
D	- Drums
DG	- Disturbed Ground
DK	- Dark-Toned
EX	- Excavation
FA	- Fill Area
GR	- Graded Area
GS	- Ground Scar
HT	- Horizontal Tank
LT	- Light-Toned
M	- Material
MM	- Mounded Material
MR	- Mounded Refuse
R	- Refuse
REV	- Revegetated
SL	- Standing Liquid
ST	- Staining
TR	- Trench
WM	- Waste Material
TTTT	- Edge of Slope
—	- Site Boundary

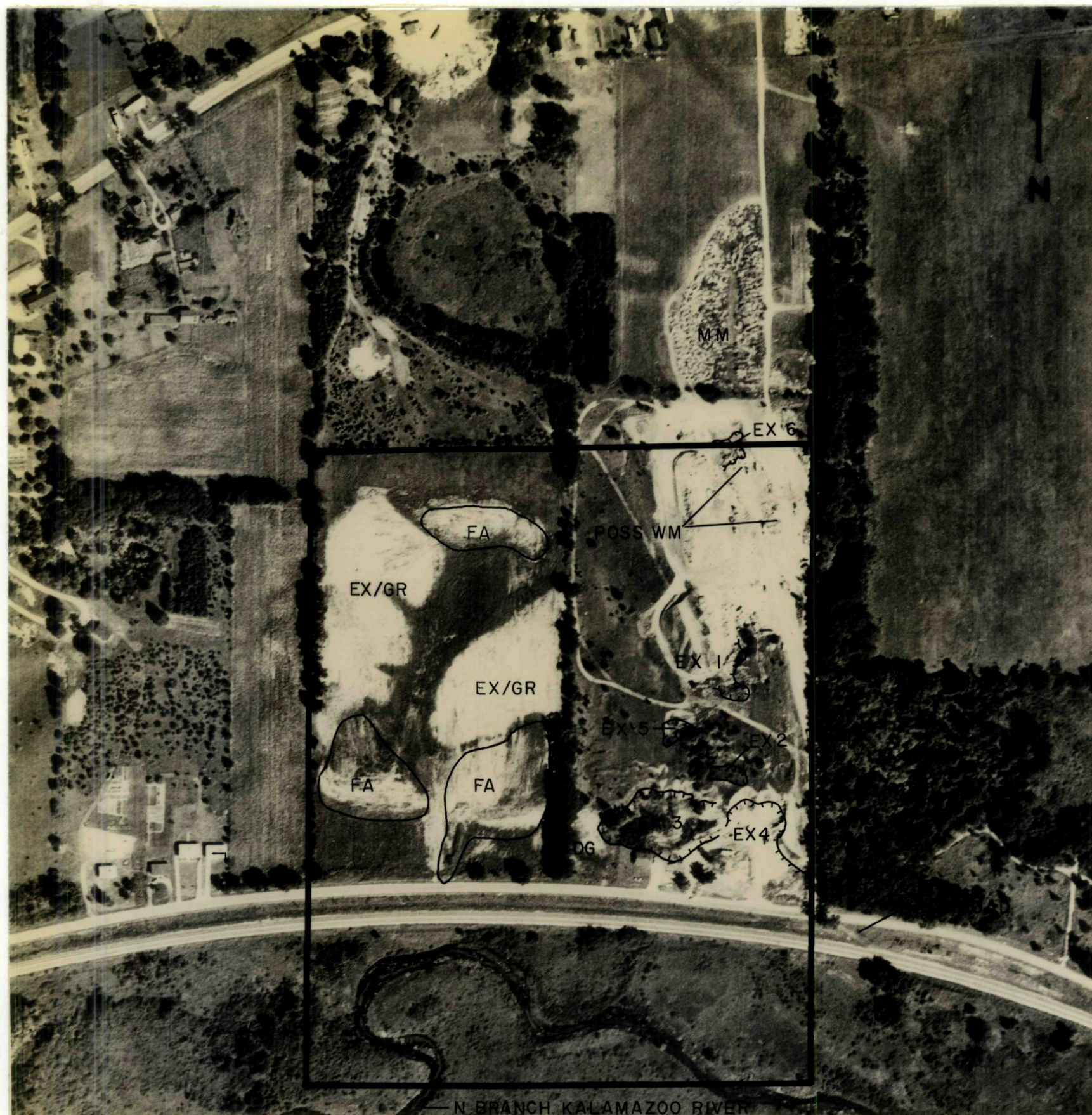


FIGURE 3
ALBION-SHERIDAN LF

SEPTEMBER 12, 1967

APPROX. SCALE 1:3,600

MAY 9, 1976 (FIGURE 4)

The site continues to be active. Landfilling activities are now visible. The northeastern portion of the site has been extensively excavated and landfilled. Scattered refuse, vehicles, and equipment (none annotated) are present throughout this area. The area of EX1 has increased and occupies a large portion of the eastern portion of the site. The western portion of EX1 contains dark-toned (DK), coarse refuse (R) and a stain (ST). The eastern portion contains two areas of standing liquid (SL) and light- (LT) and dark-toned mounded material. EX2 appears to contain a small amount of light-toned material (M). EX3 continues to contain liquid (not annotated); it does not appear to be an active location of removal or disposal. Mounded material, probably earthen, is present east of EX3. The disturbed ground visible west of EX3 in 1967 has revegetated. EX4 occupies much the same area as in 1967; however, filling has leveled a portion of the eastern slope. Light-toned coarse refuse is visible south of EX4. EX5 is no longer present; it was in the current location of the expanded EX1. EX6 is no longer present; the area has been filled and the present slope has been annotated. Three areas of light-toned material and a probable horizontal tank are in the northeastern portion of the site. EX7 is north of EX1 and contains dark-toned material.

The western portion of the site that was filled and graded in 1967 has revegetated except for two ground scarred (GS) areas; vehicle tracks (not annotated) are also visible in this area.

The site has continued to expand northward since 1967. The mounded material seen north of the site boundary has revegetated (REV). Two probable stains and dark-toned material are in the vicinity of the revegetated mounded material. An excavation, EX8, with two adjacent dark-toned stains or standing liquid, is noted north of the site. Mounded material, probably earthen, is visible north of EX8. Two areas of light-toned mounded material are also visible outside the northern site boundary.

LEGEND

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- GS - Ground Scar
- HT - Horizontal Tank
- LT - Light-Toned
- M - Material
- MM - Mounded Material
- MR - Mounded Refuse
- R - Refuse
- REV - Revegetated
- SL - Standing Liquid
- ST - Staining
- TR - Trench
- WM - Waste Material
- TTTT - Edge of Slope
- - Site Boundary

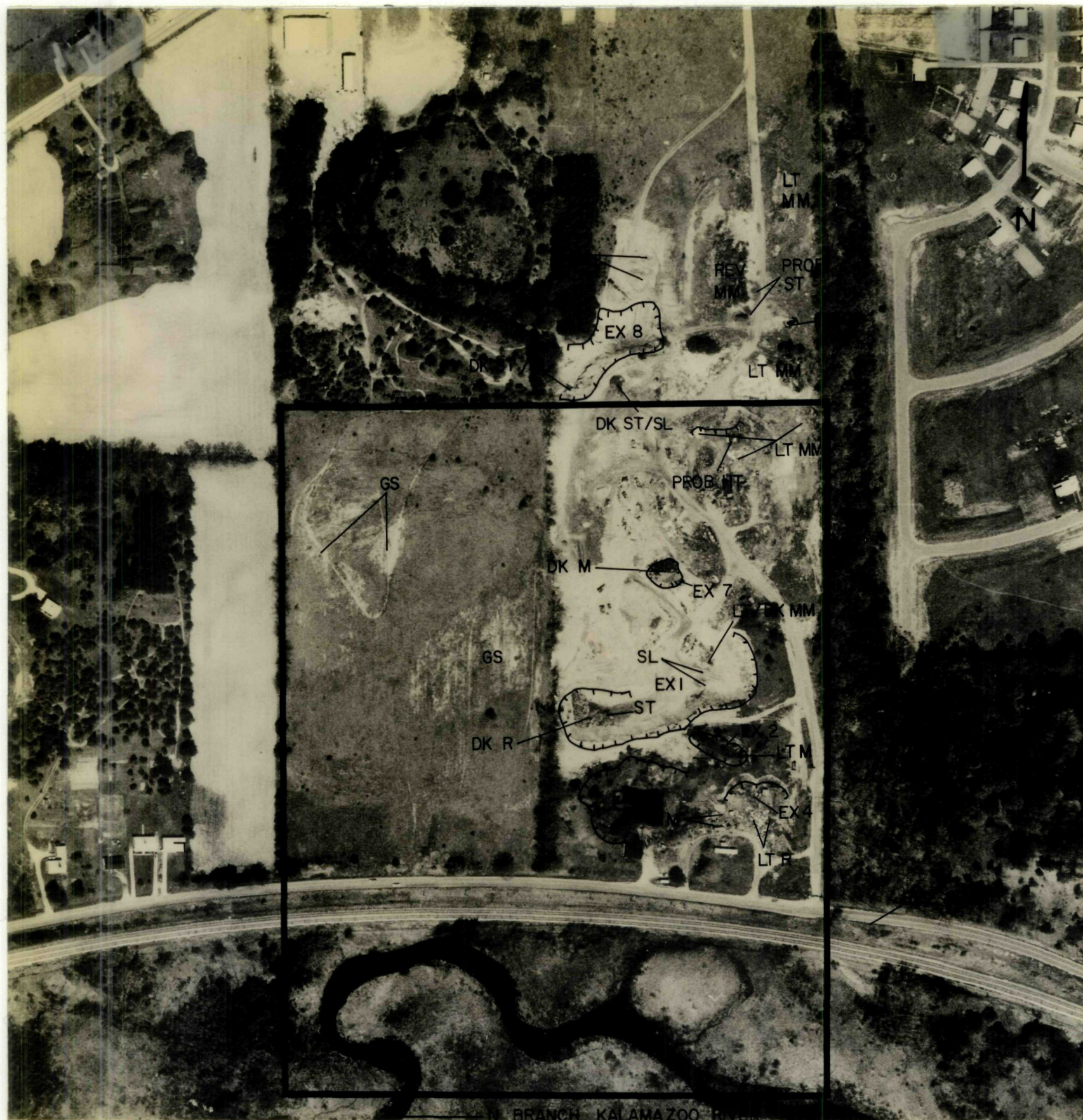


FIGURE 4
ALBION-SHERIDAN LF

MAY 9, 1976

APPROX. SCALE 1:3,500

APRIL 18, 1981 (FIGURE 5)

Extensive filling activity has occurred in the eastern portion of the site. EX1 and the western portion of EX2 have been filled. EX3 has undergone filling activity and no longer contains liquid. The mounded material visible east of EX3 in 1976 is no longer present. EX4 remains with no significant change. EX7 has been filled. Light-toned material and light-toned mounded material are seen within the northern site boundary.

Ground scarring and vehicle tracks (not annotated) remain visible in the western portion of the site.

The area north of the site boundary continues to be active. EX8 has been filled. An additional excavation, EX9, is seen northeast of the previous location of EX8, in an area where mounded material was visible in 1976. A pit containing light-toned and dark-toned material is located in an area where revegetated mounded material was visible in 1976. A large dark-toned area is present just north of the site boundary.

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- WM - Waste Material
- ||||| - Edge of Slope
- - Site Boundary

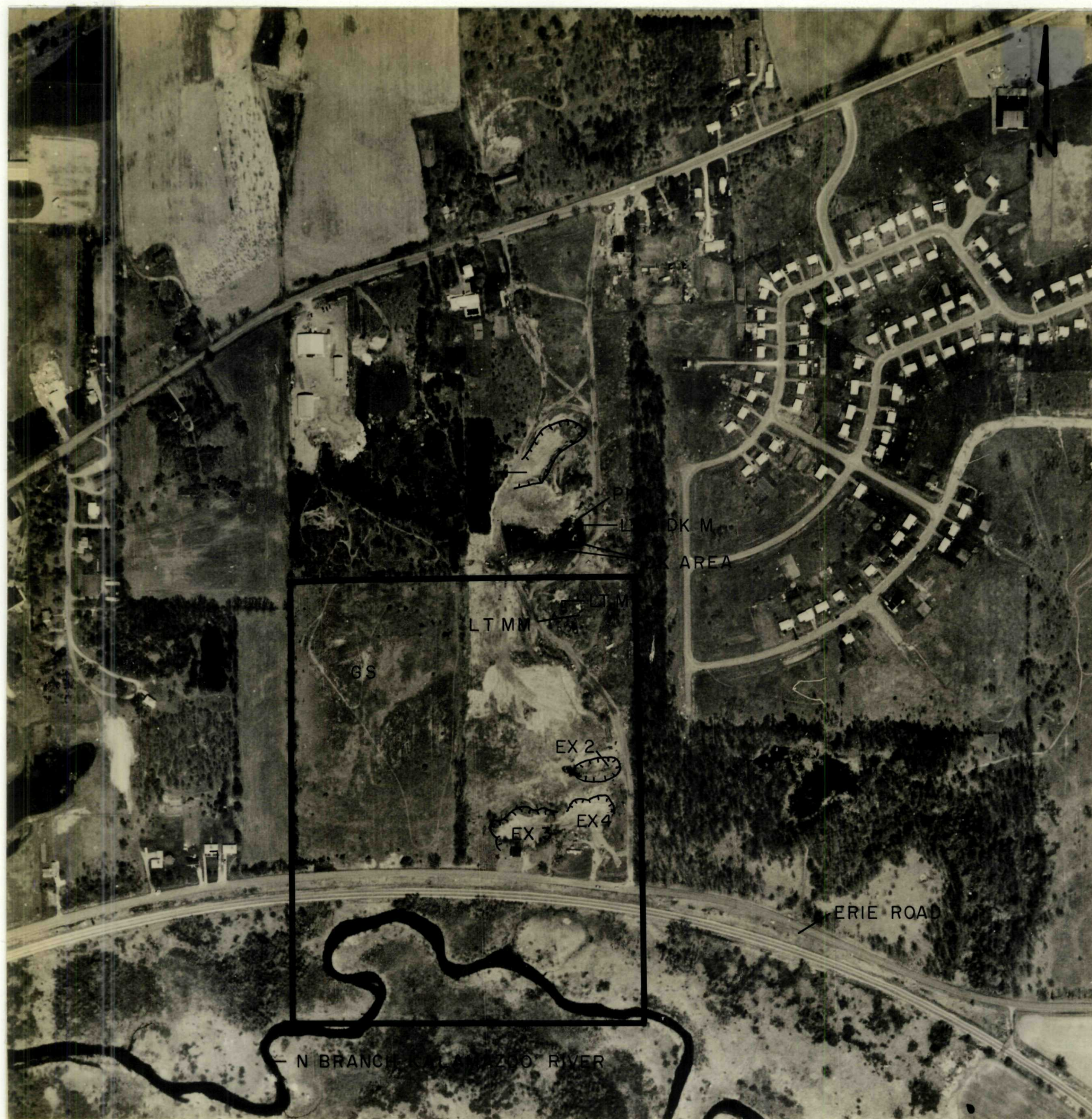


FIGURE 5
ALBION-SHERIDAN LF

APRIL 18, 1981

APPROX. SCALE 1:5,600

OCTOBER 2, 1990 (FIGURE 6)

The eastern portion of the site has almost completely revegetated, with refuse visible throughout. EX2 has been partially filled, and refuse is visible to the northeast. EX3 remains with no significant change in size or shape, and a trailer (not annotated) is located on top of the filled area. Mounded refuse (MR) is located south of EX3. EX4 remains with no significant change. Within the northeast corner of the site, four areas of light-toned material, an area of blue-toned material, four areas of refuse, three possible drums (D), and a horizontal tank (HT) are visible.

The western portion of the site remains scarred, and extensive vehicle tracks are visible, probably from recreational activity.

The area north of the site boundary remains active. EX9 is actively receiving refuse similar in appearance to the large quantities of refuse to the northeast. The area north of the site contains two cylindrical objects (CO), three cleared areas (CA), a possible drum and a trench (TR). The pit has been filled, and a cleared area is visible in its approximate location. The dark-toned area has revegetated.

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- HT - Horizontal Tank
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- R - Refuse
- REV - Revegetated
- SL - Standing Liquid
- ST - Staining
- TR - Trench
- WM - Waste Material
- TTTT - Edge of Slope
- - Site Boundary



FIGURE 6
ALBION-SHERIDAN LF

OCTOBER 2, 1990

APPROX. SCALE 1:3,800

REFERENCES

AERIAL PHOTOGRAPHY

<u>Date</u>	<u>Agency</u>	<u>Mission Code</u>	<u>Agency Frame #</u>	<u>Orig. Scale</u>	<u>EPIC Frame #</u>
October 18, 1961	ASCS ¹	BDF	139,140	1:20,000	26582:129,130
September 12, 1967	ASCS	BDF	172,173	1:20,000	26582:132,133
October 21, 1974	ASCS	26025	9,10	1:40,000	21387:093,094
May 9, 1976	USGS ²	VDZW	119,120	1:18,000	20441,20442
April 18, 1981	ASCS	26025	7,8	1:40,000	22154:033,34
May 3, 1981	USGS	NHAP 58	455:16-18	1:58,000	22013-22015
June 25, 1986	USGS	NHAP 2	475:9-11	1:58,000	22010-22012
October 2, 1990	EPA ³	90/061	7693-7695	1:4,000	90/061:7693-7695

MAPS

<u>Source</u>	<u>Name</u>	<u>Scale</u>	<u>Date</u>
USGS	Northeast Albion, MI	1:24,000	1981
USGS	Southeast Albion, MI	1:24,000	1981

¹Agricultural Stabilization and Conservation Service, U.S. Department of Agriculture

²U.S. Geological Survey, U.S. Department of the Interior

³U.S. Environmental Protection Agency